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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/709,364

04/29/2004

James Wlos

4023

3363

31424

7590

11/24/2006

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EXAMINER

LEON, EDWIN A

ART UNIT

PAPER NUMBER

2833

DATE MAILED: 11/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/709,364

Applicant(s)

WLOS ET AL.

Examiner

Edwin A. León

Art Unit

2833

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) ✓
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 12, 2006 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 9-10, 12-19 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arcykiewicz et al. (U.S. Patent No. 6,267,612) in view of Nelson (U.S. Patent No. 5,454,735). With regard to Claims 1-4 and 9, Arcykiewicz et al. (Figs. 1-3) discloses a connector interface for connecting to a cylindrical female connector body (23) having an outer diameter surface (Fig. 2) and a bore (Fig. 2) with an inner diameter

surface (Fig. 2), comprising: a male connector body (20, 22) with a plurality of integral outer spring fingers (24) biased for an interference fit upon the outer diameter surface; a front end portion of a sleeve (20) of the male connector body adapted to insert within the bore.

However, Arcykiewicz et al. doesn't show a first spring located on an outer diameter of the sleeve, the first spring dimensioned for direct contact between the inner diameter surface of the bore and the outer diameter of the sleeve, the first spring contacting the inner diameter surface upon mating of the male connector body with the female connector body, the first spring being located by a first groove formed in the outer diameter of the sleeve, the first spring being a canted coil spring, an inner conductor contact positioned coaxially within a sleeve bore by an insulator.

Nelson teaches (in Fig. 1) a similar connector having a first spring (11) located on an outer diameter of the sleeve (Fig. 1), the first spring dimensioned for direct contact between the inner diameter surface of the bore (Fig. 1) and the outer diameter of the sleeve, the first spring contacting the inner diameter surface upon mating of the male connector body (64) with the female connector body (13), the first spring being located by a first groove (80) formed in the outer diameter of the sleeve, the first spring being a canted coil spring (11), an inner conductor contact (86) positioned coaxially within a sleeve bore (68) by an insulator (insulation of 85).

Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify the connector of Arcykiewicz et al. by including a first spring located on an outer diameter of the sleeve, the first spring dimensioned for

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direct contact between the inner diameter surface of the bore and the outer diameter of the sleeve, the first spring contacting the inner diameter surface upon mating of the male connector body with the female connector body, the first spring being located by a first groove formed in the outer diameter of the sleeve, the first spring being a canted coil spring, an inner conductor contact positioned coaxially within a sleeve bore by an insulator as taught in Nelson in order to prevent the male and female parts from becoming separated unless the cables are subjected to substantial tensile forces (Nelson, Column 2, Lines 60-65).

Regarding Claim 9, the limitation "the first spring is dimensioned whereby the first spring elastically deforms between the sleeve and the inner diameter surface upon mating of the male connector body with the female connector body has been given little patentable weight since it has been held that the functional language "whereby" statement does not define any structure and accordingly can not serve to distinguish. *In re Mason*, 114 USPQ 127, 44 CCPA 937 (1957).

With regard to Claim 18-19, Arcykiewicz et al. (Figs. 1-3) discloses a connector interface between a female connector (23) with an outer diameter surface (Fig. 2) and a bore (Fig. 2) with an inner diameter surface (Fig. 2) and a male connector (20, 22), comprising: a plurality of outer spring fingers (24) formed in a leading edge of a body (22) of the male connector; the plurality of outer spring fingers biased to engage an outer diameter surface of the female connector.

However, Arcykiewicz et al. doesn't show a first spring electrically coupled to the male connector; the first spring biased to directly contact the inner diameter surface of

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the bore, the first spring being located by a first groove formed in an outer diameter of a sleeve within the male connector.

Nelson teaches (in Fig. 1) a similar connector having a first spring (11) located on an outer diameter of the sleeve (Fig. 1), the first spring dimensioned for direct contact between the inner diameter surface of the bore (Fig. 1) and the outer diameter of the sleeve, the first spring contacting the inner diameter surface upon mating of the male connector body (64) with the female connector body (13), the first spring being located by a first groove (80) formed in the outer diameter of the sleeve, the first spring being a canted coil spring (11).

Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify the connector of Arcykiewicz et al. by including a first spring electrically coupled to the male connector; the first spring biased to directly contact the inner diameter surface of the bore, the first spring being located by a first groove formed in an outer diameter of a sleeve within the male connector as taught in Nelson in order to prevent the male and female parts from becoming separated unless the cables are subjected to substantial tensile forces (Nelson, Column 2, Lines 60-65).

With regard to Claims 10, 12-13 and 22-24, the combination of Arcykiewicz et al. and Nelson discloses the claimed invention as shown above except for a second groove located around the plurality of outer spring rings, a second spring positioned in the second groove biasing the plurality of outer spring fingers inward, the female connector has a third groove located on the inner diameter surface; the third groove adapted to align with the first groove when the male connector body is seated against the female

connector and the third groove adapted to receive an inner diameter contacting portion of the first spring when the male connector body is seated against the female connector.

Still, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a second groove located around the plurality of outer spring rings, a second spring positioned in the second groove biasing the plurality of outer spring fingers inward, the female connector having a third groove located on the inner diameter surface; the third groove adapted to align with the first groove when the male connector body is seated against the female connector and the third groove adapted to receive an inner diameter contacting portion of the first spring when the male connector body is seated against the female connector, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

With regard to Claim 15, Arcykiewicz et al. (Figs. 1-3) discloses each of the plurality of outer spring fingers having an angled face (Fig. 1).

With regard to Claim 16, Arcykiewicz et al. (Figs. 1-3) discloses the sleeve is formed as a separate component press-fit into place within the male connector body.

With regard to Claim 17, Arcykiewicz et al. (Figs. 1-3) discloses the sleeve being press-fit within the male connector body up to an internally projecting shoulder (15) of the male connector body.

4. Claims 5-8 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arcykiewicz et al. (U.S. Patent No. 6,267,612) in view of Nelson (U.S. Patent No.

5,454,735) in further view of Plummer et al. (U.S. Patent No. 6,650,209). The combination of Arcykiewicz and Nelson discloses the claimed invention as shown above except for the first spring being a spring finger ring having a plurality of spring fingers projecting outward from a collar, a radius being formed in a leading edge of each spring finger, the collar being dimensioned for press-fit mounting to the outer diameter of the sleeve, the first spring being a ring having a plurality of deflectable protrusions.

Plummer et al. teaches a similar connector having a first spring (36) being a spring finger ring (Column 3, Lines 42-45) having a plurality of spring fingers (Fig. 7) projecting outward from a collar (flat part of 36 shown in Fig. 7), a radius being formed in a leading edge of each spring finger, the collar being dimensioned for press-fit mounting to the outer diameter of the sleeve (30), the first spring being a ring (Column 3, Lines 42-45) having a plurality of deflectable protrusions (Fig. 7).

Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify the connector of Arcykiewicz and Nelson by including the a first spring being a spring finger ring having a plurality of spring fingers projecting outward from a collar, a radius being formed in a leading edge of each spring finger, the collar being dimensioned for press-fit mounting to the outer diameter of the sleeve, the first spring being a ring having a plurality of deflectable protrusions as taught in Plummer et al. in order to provide suitable contact force providing a desired electrical connection between the parts of the connector (Plummer et al., Column 4, Lines 20-24).



5. Claims 11 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arcykiewicz et al. (U.S. Patent No. 6,267,612) in view of Nelson (U.S. Patent No. 5,454,735) in further view of Maury (U.S. Patent No. 6,210,221). The combination of Arcykiewicz and Nelson discloses the claimed invention as shown above except for the female connector being one of an SMA and a Type N connector.

Maury (Figs. 3-4) discloses a similar connector having a second groove (where 20 is located) located around a plurality of outer spring fingers (15); a second spring (20) positioned in the second groove biasing the plurality of outer spring fingers inward and the female connector being one of an SMA (Column 1, Lines 42-46) and a Type N connector (Column 1, Lines 54-58).

Therefore, it would have been obvious to one with ordinary skill in the art at the time the invention was made to modify the interface of Hall et al. by the female connector being one of an SMA and a Type N connector as taught in Maury in order to make the connector more versatile.

### ***Response to Arguments***

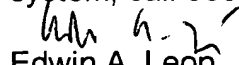
6. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

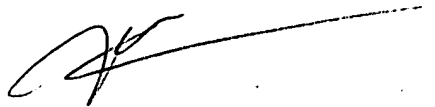
**Conclusion**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edwin A. León whose telephone number is (571) 272-2008. The examiner can normally be reached on Monday - Friday 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A. Bradley can be reached on 571-272-2800, extension 33. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Edwin A. León  
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November 21, 2006

  
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PRIMARY EXAMINER